

## PATENT ABSTRACTS OF JAPAN

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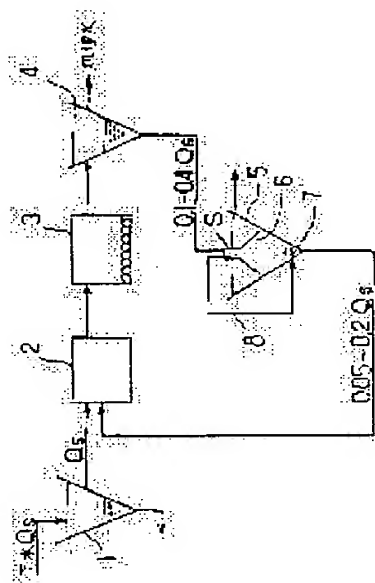
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**(54) SIMULTANEOUS REMOVAL OF NITROGEN AND PHOSPHORUS IN WASTE WATER BY SULFUR REPLENISHING AEROBIC-ANAEROBIC ACTIVATED SLUDGE METHOD**

**(57)Abstract:**

**PURPOSE:** To simultaneously remove nitrogen and phosphorus with high efficiency, by performing aerobic-anaerobic activated sludge treatment in such a state that marble particles are contained in sludge in a nitrification process and sulfur particles are contained in sludge in a denitrification process.

**CONSTITUTION:** Water to be treated such as sewage is supplied to the final precipitation basin 1 of a first solid-liquid separation process to remove floating substances therein and treated water receiving solid-liquid separation is supplied to the aerobic nitrification tank 2 of a nitrification process. A BOD component is adsorbed, decomposed and removed by activated sludge in the aerobic tank 2 and the nitrogen component in the inflow sewage receives ammonification and/or nitrification in the aerobic tank 2 to be converted to  $\text{NO}_3\text{-N}$ . Subsequently, the liquid mixture of treated water and activated sludge in the nitrification process is supplied to the hermitically closed anaerobic denitrification tank 3 of a denitrification process. Sulfur particles with a particle size of 10W100mm are laid to the entire bottom part of the anaerobic denitrification tank 3 and  $\text{NO}_3\text{-N}$  receives denitrification by the denitrification capacity of activated sludge and removed as  $\text{N}_2$ - gas.



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